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<table><tr><td>60/084,564</td><td>7 May 1998 (07.05.98)</td><td>US</td></tr><tr><td>60/087,645</td><td>2 June 1998 (02.06.98)</td><td>US</td></tr><tr><td>60/093,712</td><td>22 July 1998 (22.07.98)</td><td>US</td></tr><tr><td>60/094,935</td><td>31 July 1998 (31.07.98)</td><td>US</td></tr><tr><td>60/095,880</td><td>10 August 1998 (10.08.98)</td><td>US</td></tr><tr><td>60/096,068</td><td>11 August 1998 (11.08.98)</td><td>US</td></tr><tr><td>Not furnished</td><td>6 May 1999 (06.05.99)</td><td>US</td></tr></table>				60/084,564	7 May 1998 (07.05.98)	US	60/087,645	2 June 1998 (02.06.98)	US	60/093,712	22 July 1998 (22.07.98)	US	60/094,935	31 July 1998 (31.07.98)	US	60/095,880	10 August 1998 (10.08.98)	US	60/096,068	11 August 1998 (11.08.98)	US	Not furnished	6 May 1999 (06.05.99)	US
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(57) Abstract Novel polynucleotides and the proteins encoded thereby are disclosed.																								

under accession number ATCC 98822. In other preferred embodiments, the polynucleotide encodes the full-length or a mature protein encoded by the cDNA insert of clone cj378_3 deposited under accession number ATCC 98822. In further preferred embodiments, the present invention provides a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:104 having biological activity, the fragment preferably comprising eight (more preferably twenty, most preferably thirty) contiguous amino acids of SEQ ID NO:104, or a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:104 having biological activity, the fragment comprising the amino acid sequence from amino acid 38 to amino acid 47 of SEQ ID NO:104.

Other embodiments provide the gene corresponding to the cDNA sequence of SEQ ID NO:103.

Further embodiments of the invention provide isolated polynucleotides produced according to a process selected from the group consisting of:

- 15 (a) a process comprising the steps of:
 - (i) preparing one or more polynucleotide probes that hybridize in 6X SSC at 65 degrees C to a nucleotide sequence selected from the group consisting of:
 - 20 (aa) SEQ ID NO:103, but excluding the poly(A) tail at the 3' end of SEQ ID NO:103; and
 - (ab) the nucleotide sequence of the cDNA insert of clone cj378_3 deposited under accession number ATCC 98822;
 - (ii) hybridizing said probe(s) to human genomic DNA in conditions at least as stringent as 4X SSC at 50 degrees C; and
 - 25 (iii) isolating the DNA polynucleotides detected with the probe(s);
- and
- (b) a process comprising the steps of:
 - 30 (i) preparing one or more polynucleotide primers that hybridize in 6X SSC at 65 degrees C to a nucleotide sequence selected from the group consisting of:
 - (ba) SEQ ID NO:103, but excluding the poly(A) tail at the 3' end of SEQ ID NO:103; and

- (bb) the nucleotide sequence of the cDNA insert of clone
cj378_3 deposited under accession number ATCC 98822;
- (ii) hybridizing said primer(s) to human genomic DNA in
conditions at least as stringent as 4X SSC at 50 degrees C;
- 5 (iii) amplifying human DNA sequences; and
- (iv) isolating the polynucleotide products of step (b)(iii).

Preferably the polynucleotide isolated according to the above process comprises a
nucleotide sequence corresponding to the cDNA sequence of SEQ ID NO:103, and
extending contiguously from a nucleotide sequence corresponding to the 5' end of SEQ
10 ID NO:103 to a nucleotide sequence corresponding to the 3' end of SEQ ID NO:103, but
excluding the poly(A) tail at the 3' end of SEQ ID NO:103. Also preferably the
polynucleotide isolated according to the above process comprises a nucleotide sequence
corresponding to the cDNA sequence of SEQ ID NO:103 from nucleotide 281 to nucleotide
541, and extending contiguously from a nucleotide sequence corresponding to the 5' end
15 of said sequence of SEQ ID NO:103 from nucleotide 281 to nucleotide 541, to a nucleotide
sequence corresponding to the 3' end of said sequence of SEQ ID NO:103 from nucleotide
281 to nucleotide 541.

In other embodiments, the present invention provides a composition comprising
a protein, wherein said protein comprises an amino acid sequence selected from the group
20 consisting of:

- (a) the amino acid sequence of SEQ ID NO:104;
- (b) a fragment of the amino acid sequence of SEQ ID NO:104, the
fragment comprising eight contiguous amino acids of SEQ ID NO:104; and
- (c) the amino acid sequence encoded by the cDNA insert of clone
25 cj378_3 deposited under accession number ATCC 98822;
- the protein being substantially free from other mammalian proteins. Preferably such
protein comprises the amino acid sequence of SEQ ID NO:104. In further preferred
embodiments, the present invention provides a protein comprising a fragment of the
amino acid sequence of SEQ ID NO:104 having biological activity, the fragment preferably
30 comprising eight (more preferably twenty, most preferably thirty) contiguous amino acids
of SEQ ID NO:104, or a protein comprising a fragment of the amino acid sequence of SEQ
ID NO:104 having biological activity, the fragment comprising the amino acid sequence
from amino acid 38 to amino acid 47 of SEQ ID NO:104.

In one embodiment, the present invention provides a composition comprising an isolated polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:105;
- 5 (b) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:105 from nucleotide 586 to nucleotide 2202;
- (c) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:105 from nucleotide 401 to nucleotide 2349;
- 10 (d) a polynucleotide comprising the nucleotide sequence of the full-length protein coding sequence of clone cw1481_1 deposited under accession number ATCC 98822;
- (e) a polynucleotide encoding the full-length protein encoded by the cDNA insert of clone cw1481_1 deposited under accession number ATCC 98822;
- 15 (f) a polynucleotide comprising the nucleotide sequence of a mature protein coding sequence of clone cw1481_1 deposited under accession number ATCC 98822;
- (g) a polynucleotide encoding a mature protein encoded by the cDNA insert of clone cw1481_1 deposited under accession number ATCC 98822;
- 20 (h) a polynucleotide encoding a protein comprising the amino acid sequence of SEQ ID NO:106;
- (i) a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:106 having biological activity, the fragment comprising eight contiguous amino acids of SEQ ID NO:106;
- 25 (j) a polynucleotide which is an allelic variant of a polynucleotide of (a)-(g) above;
- (k) a polynucleotide which encodes a species homologue of the protein of (h) or (i) above ;
- (l) a polynucleotide that hybridizes under stringent conditions to any one of the polynucleotides specified in (a)-(i); and
- 30 (m) a polynucleotide that hybridizes under stringent conditions to any one of the polynucleotides specified in (a)-(i) and that has a length that is at least 25% of the length of SEQ ID NO:105.

Preferably, such polynucleotide comprises the nucleotide sequence of SEQ ID NO:105 from nucleotide 586 to nucleotide 2202; the nucleotide sequence of SEQ ID

NO:105 from nucleotide 401 to nucleotide 2349; the nucleotide sequence of the full-length protein coding sequence of clone cw1481_1 deposited under accession number ATCC 98822; or the nucleotide sequence of a mature protein coding sequence of clone cw1481_1 deposited under accession number ATCC 98822. In other preferred embodiments, the polynucleotide encodes the full-length or a mature protein encoded by the cDNA insert of clone cw1481_1 deposited under accession number ATCC 98822. In further preferred embodiments, the present invention provides a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:106 having biological activity, the fragment preferably comprising eight (more preferably twenty, most preferably thirty) contiguous amino acids of SEQ ID NO:106, or a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:106 having biological activity, the fragment comprising the amino acid sequence from amino acid 264 to amino acid 273 of SEQ ID NO:106.

Other embodiments provide the gene corresponding to the cDNA sequence of SEQ ID NO:105.

Further embodiments of the invention provide isolated polynucleotides produced according to a process selected from the group consisting of:

- (a) a process comprising the steps of:
 - (i) preparing one or more polynucleotide probes that hybridize in 6X SSC at 65 degrees C to a nucleotide sequence selected from the group consisting of:
 - (aa) SEQ ID NO:105, but excluding the poly(A) tail at the 3' end of SEQ ID NO:105; and
 - (ab) the nucleotide sequence of the cDNA insert of clone cw1481_1 deposited under accession number ATCC 98822;
 - (ii) hybridizing said probe(s) to human genomic DNA in conditions at least as stringent as 4X SSC at 50 degrees C; and
 - (iii) isolating the DNA polynucleotides detected with the probe(s);
- and
- (b) a process comprising the steps of:
 - (i) preparing one or more polynucleotide primers that hybridize in 6X SSC at 65 degrees C to a nucleotide sequence selected from the group consisting of:

- (b) the nucleotide sequence of SEQ ID NO:99 from nucleotide 597 to nucleotide 992;
- (c) the nucleotide sequence of SEQ ID NO:99 from nucleotide 765 to nucleotide 992;
- (d) the nucleotide sequence of the full-length protein coding sequence of clone cb123_1 deposited under accession number ATCC 98822;
- (e) a nucleotide sequence encoding the full-length protein encoded by the cDNA insert of clone cb123_1 deposited under accession number ATCC 98822;
- (f) the nucleotide sequence of a mature protein coding sequence of clone cb123_1 deposited under accession number ATCC 98822;
- (g) a nucleotide sequence encoding a mature protein encoded by the cDNA insert of clone cb123_1 deposited under accession number ATCC 98822;
- (h) a nucleotide sequence encoding a protein comprising the amino acid sequence of SEQ ID NO:100;
- (i) a nucleotide sequence encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:100, the fragment comprising eight contiguous amino acids of SEQ ID NO:100;
- (j) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 65 degrees C, or 4X SSC at 42 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(g); and
- (k) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 50 degrees C, or 6X SSC at 40 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(g), and that has a length that is at least 25% of the length of SEQ ID NO:99.

109. A protein comprising an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of SEQ ID NO:100;
- (b) a fragment of the amino acid sequence of SEQ ID NO:100, the fragment comprising eight contiguous amino acids of SEQ ID NO:100; and
- (c) the amino acid sequence encoded by the cDNA insert of clone cb123_1 deposited under accession number ATCC 98822;

the protein being substantially free from other mammalian proteins.

110. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:

- (a) the nucleotide sequence of SEQ ID NO:101;
- (b) the nucleotide sequence of SEQ ID NO:101 from nucleotide 181 to nucleotide 480;
- (c) the nucleotide sequence of the full-length protein coding sequence of clone ch245_1 deposited under accession number ATCC 98822;
- (d) a nucleotide sequence encoding the full-length protein encoded by the cDNA insert of clone ch245_1 deposited under accession number ATCC 98822;
- (e) a nucleotide sequence encoding a protein comprising the amino acid sequence of SEQ ID NO:102;
- (f) a nucleotide sequence encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:102, the fragment comprising eight contiguous amino acids of SEQ ID NO:102;
- (g) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 65 degrees C, or 4X SSC at 42 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(d); and
- (h) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 50 degrees C, or 6X SSC at 40 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(d), and that has a length that is at least 25% of the length of SEQ ID NO:101.

111. A protein comprising an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of SEQ ID NO:102;
- (b) a fragment of the amino acid sequence of SEQ ID NO:102, the fragment comprising eight contiguous amino acids of SEQ ID NO:102; and
- (c) the amino acid sequence encoded by the cDNA insert of clone ch245_1 deposited under accession number ATCC 98822;

the protein being substantially free from other mammalian proteins.

112. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:

- (a) the nucleotide sequence of SEQ ID NO:103;

- (ab) the nucleotide sequence of the cDNA insert of clone cw691_11 deposited under accession number ATCC 98817;
- (ii) hybridizing said probe(s) to human genomic DNA in conditions at least as stringent as 4X SSC at 50 degrees C; and
- 5 (iii) isolating the DNA polynucleotides detected with the probe(s);
- and
- (b) a process comprising the steps of:
- (i) preparing one or more polynucleotide primers that
- 10 hybridize in 6X SSC at 65 degrees C to a nucleotide sequence selected from the group consisting of:
- (ba) SEQ ID NO:59, but excluding the poly(A) tail at the 3' end of SEQ ID NO:59; and
- (bb) the nucleotide sequence of the cDNA insert of clone
- 15 cw691_11 deposited under accession number ATCC 98817;
- (ii) hybridizing said primer(s) to human genomic DNA in conditions at least as stringent as 4X SSC at 50 degrees C;
- (iii) amplifying human DNA sequences; and
- (iv) isolating the polynucleotide products of step (b)(iii).
- 20 Preferably the polynucleotide isolated according to the above process comprises a nucleotide sequence corresponding to the cDNA sequence of SEQ ID NO:59, and extending contiguously from a nucleotide sequence corresponding to the 5' end of SEQ ID NO:59 to a nucleotide sequence corresponding to the 3' end of SEQ ID NO:59, but excluding the poly(A) tail at the 3' end of SEQ ID NO:59. Also preferably the
- 25 polynucleotide isolated according to the above process comprises a nucleotide sequence corresponding to the cDNA sequence of SEQ ID NO:59 from nucleotide 76 to nucleotide 942, and extending contiguously from a nucleotide sequence corresponding to the 5' end of said sequence of SEQ ID NO:59 from nucleotide 76 to nucleotide 942, to a nucleotide sequence corresponding to the 3' end of said sequence of SEQ ID NO:59 from nucleotide
- 30 76 to nucleotide 942.

In other embodiments, the present invention provides a composition comprising a protein, wherein said protein comprises an amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of SEQ ID NO:60;

(b) a fragment of the amino acid sequence of SEQ ID NO:60, the fragment comprising eight contiguous amino acids of SEQ ID NO:60; and

(c) the amino acid sequence encoded by the cDNA insert of clone cw691_11 deposited under accession number ATCC 98817;

- 5 the protein being substantially free from other mammalian proteins. Preferably such protein comprises the amino acid sequence of SEQ ID NO:60. In further preferred embodiments, the present invention provides a protein comprising a fragment of the amino acid sequence of SEQ ID NO:60 having biological activity, the fragment preferably comprising eight (more preferably twenty, most preferably thirty) contiguous amino acids
- 10 of SEQ ID NO:60, or a protein comprising a fragment of the amino acid sequence of SEQ ID NO:60 having biological activity, the fragment comprising the amino acid sequence from amino acid 139 to amino acid 148 of SEQ ID NO:60.

In one embodiment, the present invention provides a composition comprising an isolated polynucleotide selected from the group consisting of:

- 15 (a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:61;
- (b) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:61 from nucleotide 11 to nucleotide 1252;
- (c) a polynucleotide comprising the nucleotide sequence of SEQ ID
- 20 NO:61 from nucleotide 119 to nucleotide 1252;
- (d) a polynucleotide comprising the nucleotide sequence of the full-length protein coding sequence of clone cw1000_2 deposited under accession number ATCC 98817;
- (e) a polynucleotide encoding the full-length protein encoded by the
- 25 cDNA insert of clone cw1000_2 deposited under accession number ATCC 98817;
- (f) a polynucleotide comprising the nucleotide sequence of a mature protein coding sequence of clone cw1000_2 deposited under accession number ATCC 98817;
- (g) a polynucleotide encoding a mature protein encoded by the cDNA
- 30 insert of clone cw1000_2 deposited under accession number ATCC 98817;
- (h) a polynucleotide encoding a protein comprising the amino acid sequence of SEQ ID NO:62;

What is claimed is:

1. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:
 - (a) the nucleotide sequence of SEQ ID NO:1;
 - (b) the nucleotide sequence of SEQ ID NO:1 from nucleotide 61 to nucleotide 366;
 - (c) the nucleotide sequence of the full-length protein coding sequence of clone bn365_53 deposited under accession number ATCC 98752;
 - (d) a nucleotide sequence encoding the full-length protein encoded by the cDNA insert of clone bn365_53 deposited under accession number ATCC 98752;
 - (e) a nucleotide sequence encoding a protein comprising the amino acid sequence of SEQ ID NO:2;
 - (f) a nucleotide sequence encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:2, the fragment comprising eight contiguous amino acids of SEQ ID NO:2;
 - (g) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 65 degrees C, or 4X SSC at 42 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(d); and
 - (h) the nucleotide sequence of a polynucleotide that hybridizes under conditions at least as stringent as 4X SSC at 50 degrees C, or 6X SSC at 40 degrees C with 50% formamide, to any one of the polynucleotides specified by (a)-(d), and that has a length that is at least 25% of the length of SEQ ID NO:1.
2. The polynucleotide of claim 1 wherein said polynucleotide is operably linked to at least one expression control sequence.
3. A host cell transformed with the polynucleotide of claim 2.
4. The host cell of claim 3, wherein said cell is a mammalian cell.
5. A process for producing a protein encoded by the polynucleotide of claim 2, which process comprises:

- (a) growing a culture of a host cell transformed with the polynucleotide of claim 2 in a suitable culture medium; and
 - (b) purifying said protein from the culture.
- 6. A protein produced according to the process of claim 5.
- 7. An isolated polynucleotide encoding the protein of claim 6.
- 8. The polynucleotide of claim 7, wherein the polynucleotide comprises the cDNA insert of clone bn365_53 deposited under accession number ATCC 98752.
- 9. A protein comprising an amino acid sequence selected from the group consisting of:
 - (a) the amino acid sequence of SEQ ID NO:2;
 - (b) a fragment of the amino acid sequence of SEQ ID NO:2, the fragment comprising eight contiguous amino acids of SEQ ID NO:2; and
 - (c) the amino acid sequence encoded by the cDNA insert of clone bn365_53 deposited under accession number ATCC 98752;the protein being substantially free from other mammalian proteins.
- 10. The protein of claim 9, wherein said protein comprises the amino acid sequence of SEQ ID NO:2.
- 11. A composition comprising the protein of claim 9 and a pharmaceutically acceptable carrier.
- 12. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:
 - (a) the nucleotide sequence of SEQ ID NO:3;
 - (b) the nucleotide sequence of SEQ ID NO:3 from nucleotide 206 to nucleotide 1915;
 - (c) the nucleotide sequence of SEQ ID NO:3 from nucleotide 1358 to nucleotide 1915;